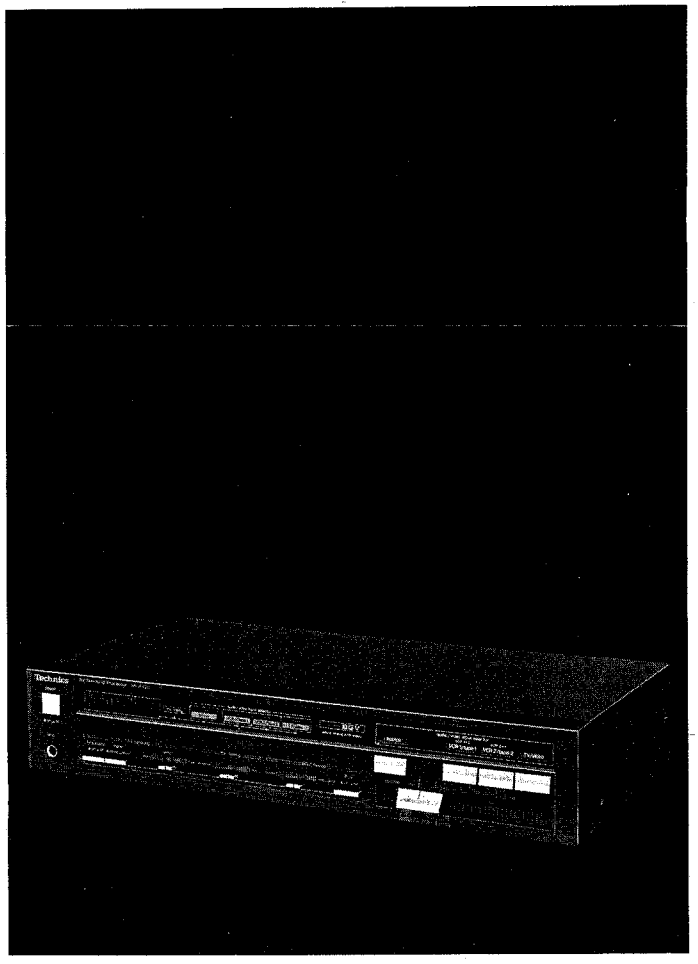
Technics

AV Surround Processor

SH-AV22

OPERATING INSTRUCTIONS



Before operating this unit, please read these instructions completely

ENGLISH

Dear Stereo Fan

We want to thank you for selecting this product and to welcome you to the growing family of satisfied Technics product owners around the world.
We feel certain you will get maximum enjoyment from this new addition to your home.
Please read these operating instructions carefully, and be sure to keep them handy for convenient reference.

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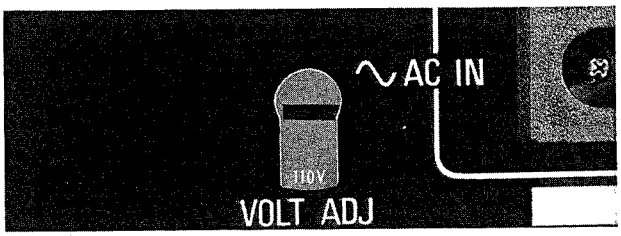
Before Using This Unit

Be sure to disconnect the mains cord before adjusting the voltage selector.
Use a minus (–) screwdriver to set the voltage selector (on the rear panel) to the voltage setting for the area in which the unit will be used.
(If the power supply in your area is 117 V or 120 V, set to the "127 V" position.)
Note that this unit will be seriously damaged if this setting is not made correctly.



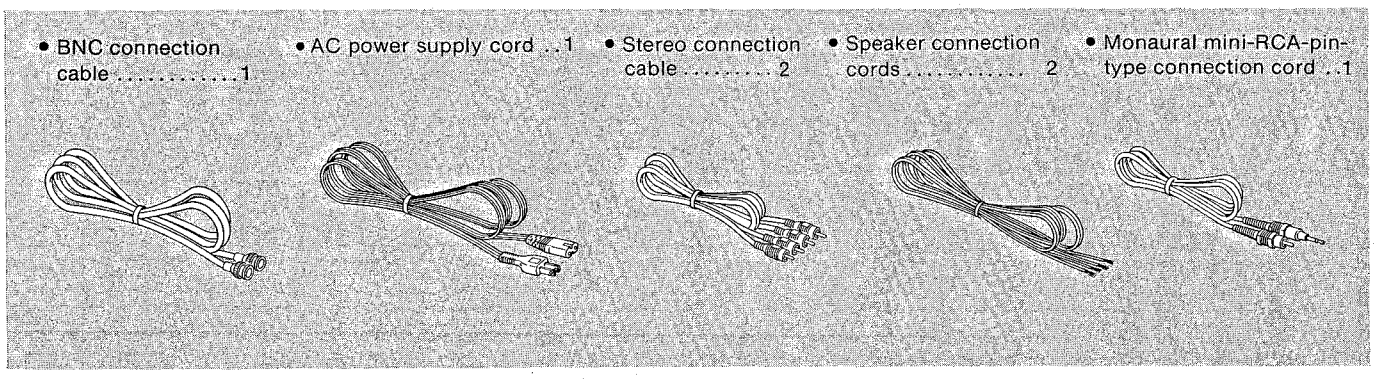
(on the rear panel of this unit)

Maintenance

To clean, use a soft dry cloth.
If the surfaces are extremely dirty, use a soft cloth, dipped into a soap and water solution or a weak detergent solution.
Wring the cloth well before wiping the unit.
Wipe once again with a soft dry cloth.
Never use alcohol, paint thinner, benzine, nor a chemically treated cloth to clean this unit.
Such chemicals may damage the finish of your unit.

Accessories

- BNC connection cable 1
- AC power supply cord .. 1
- Stereo connection cable 2
- Speaker connection cords 2
- Monaural mini-RCA-pin-type connection cord .. 1



SH-AV22

ENGLISH

INCLUDED MONAURAL MINI-RCA-TYPE CONNECTION CORD

If the TV does not have audio output termnals (for audio/video use), the included monaural mini-RCA-pin-type connection cord can be used to make connection so that a surround-sound simulated stereo effect can be enjoyed.

ESPAÑOL

CABLE DE CONEXIÓN CON MINI-CLAVIJA DE TIPO RCA MONOAURAL

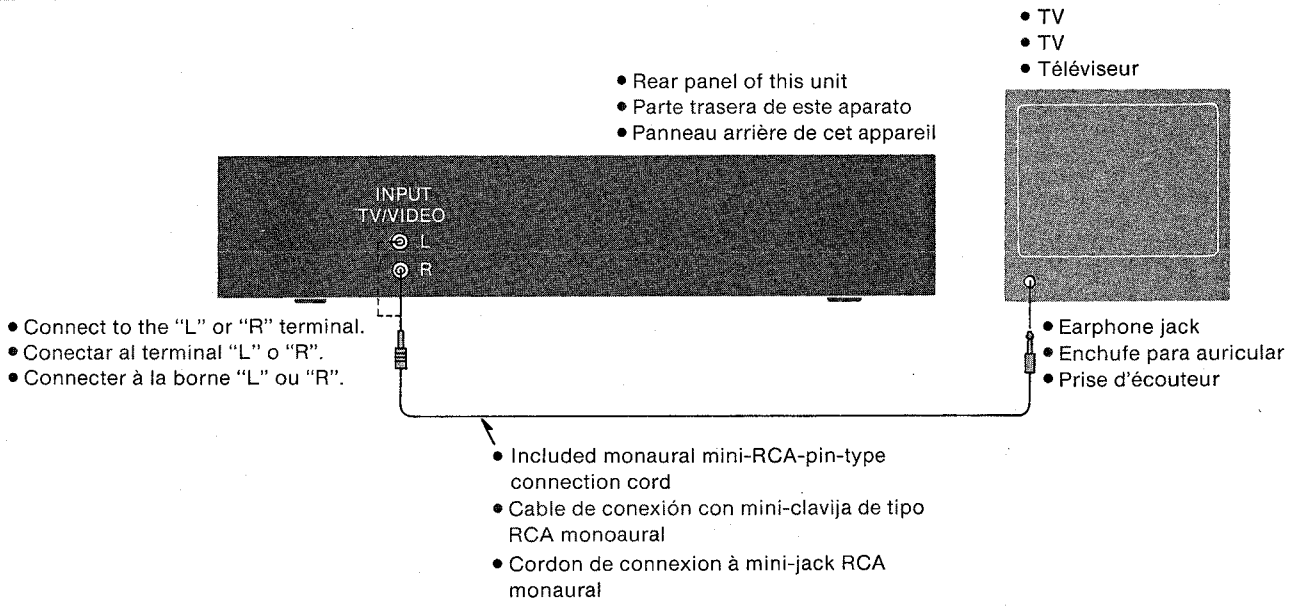
Si el televisor no tiene terminales de salida de audio (para uso como audio/video). Se puede utilizar el cable de conexión con mini-clavija de tipo RCA, incluido, para realizar las conexiones y disfrutar de un efecto de sonido ambiental estereofónico simulado.

FRANÇAIS

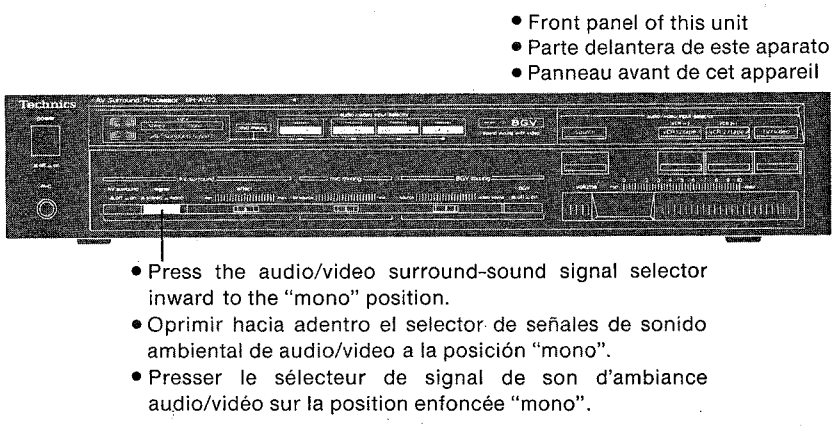
CORDON DE CONNEXION À MINI-JACK RCA MONAURAL

Si le téléviseur ne possède pas de bornes de sortie audio (à usage audio/vidéo), le cordon de connexion à mini-jack qui est fourni peut être utilisé pour réaliser le branchement de sorte que l'n peut bénéficier d'un son d'ambiance stéréo simulé.

1. Connections / 1. Conexiones / 1. Branchements


• TV
• TV
• Téléviseur
• Rear panel of this unit
• Parte trasera de este aparato
• Panneau arrière de cet appareil
INPUT
TV/VIDEO
L
R
• Connect to the "L" or "R" terminal.
• Conectar al terminal "L" o "R".
• Connecter à la borne "L" ou "R".
• Earphone jack
• Enchufe para auricular
• Prise d'écouteur
• Included monaural mini-RCA-pin-type connection cord
• Cable de conexión con mini-clavija de tipo RCA monoaural
• Cordon de connexion à mini-jack RCA monaural

2. Operation / 2. Funcionamiento / 2. Fonctionnement


• Front panel of this unit
• Parte delantera de este aparato
• Panneau avant de cet appareil
Technics
• Press the audio/video surround-sound signal selector inward to the "mono" position.
• Oprimir hacia adentro el selector de señales de sonido ambiental de audio/video a la posición "mono".
• Presser le sélecteur de signal de son d'ambiance audio/vidéo sur la position enfoncée "mono".

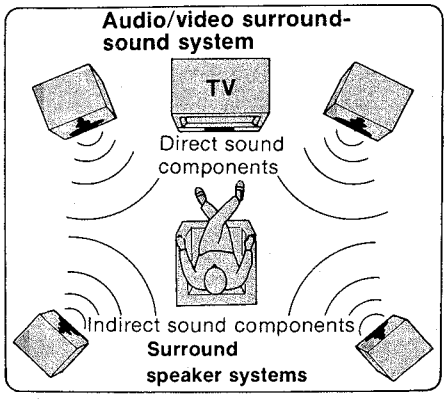
Printed in Japan

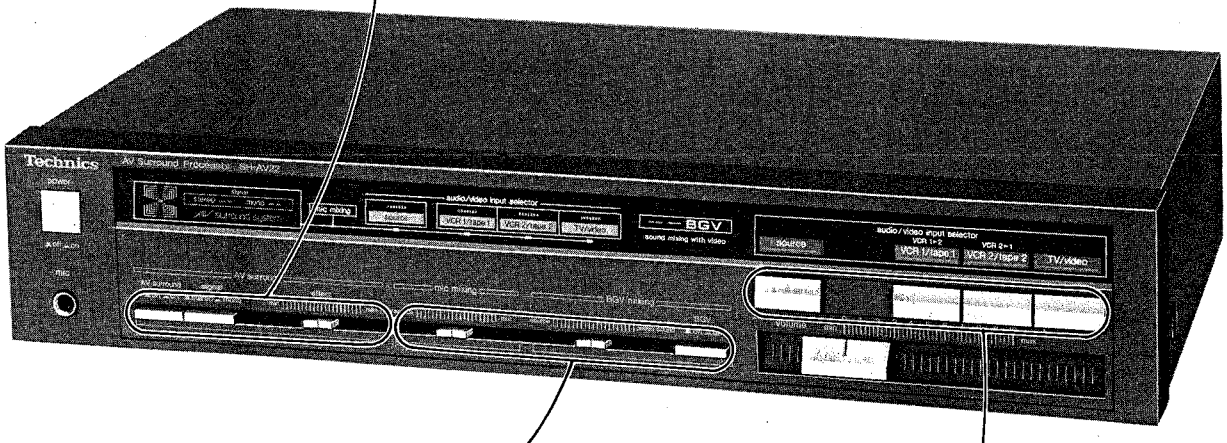
SQX53620
H0585C0

Features

The "surround effect" brings you the ambient realism of concert hall sound.

This unit creates a surround-sound or ambient sound effect by deriving the reverberant sound information from the original stereo (or mono) signal and selectively reproducing it through front and rear pairs of speakers. The unit is thereby capable of recreating the expansive natural ambience of a concert hall or movie theater. This is especially effective with video sources since the picture and sound reinforce each other.
Not only is this useful with stereo sources—monophonic video tapes, TV broadcasts, and any other mono sources can be reproduced with a simulated stereo effect. Simply add this unit and a pair of rear speakers to easily create a convincing AV surround system.





Microphone and audio source mixing with video source.

The BGV and microphone mixing functions let you add music, commentary, narration, and sound effects to video sound during reproduction or while copying from one VCR to another. The microphone mixing control is downstream from the BGV mixing circuit so when the BGV mixing on-off switch is ON, you can add microphone input to your BGV mix; and when the BGV mixing on-off switch is OFF, you can add microphone input to your choice of sources as selected by the audio/video input selectors. These features make it remarkably easy to create original sound tracks for video tapes.

BGV ("background video"):
The term BGV ("background video") refers to watching a video source while listening to a complementary sound source to go with it.

Audio/video input selector enable simultaneous audio and video signal switching.

When one of the three audio/video input selectors is pressed, this unit automatically switches both the video and audio signals for that source. For the VCR 1/tape 1 and VCR 2/tape 2 selectors, both the input and the output are switched in this way. The "TV/video" selector only handles input signals.
This system makes it easy to copy and edit video tapes in either direction between two VCRs. Furthermore, when the source button is depressed, the source selected on the connected amplifier or receiver automatically becomes the input source and is reproduced through the speakers.

For Safe Use of This Unit

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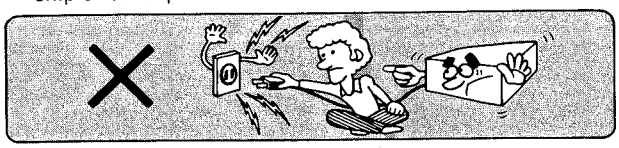
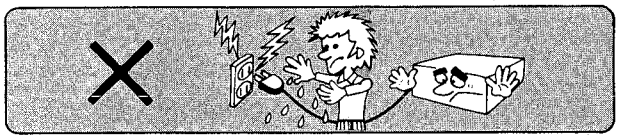
■ Use a standard electrical AC wall outlet

1. **Use from an AC power source of high voltage, such as for air conditioners, is very dangerous.**
   Be extremely careful not to make a connection to the electrical outlet for a large air conditioner or central-heating unit which uses high voltage, because there is the possibility of fire.
2. **A DC power source cannot be used.**
   Be sure to check the power source carefully, especially on a ship or other place where DC is used.



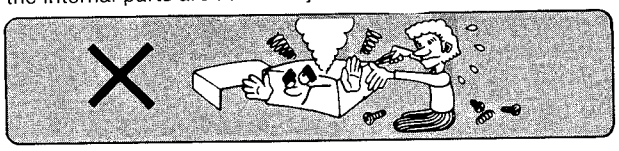
■ Connection and removal of the power cord plug

1. **Wet hands are dangerous.**
   A dangerous electric shock may result if the plug is touched by wet hands.
2. **Don't pull the power cord.**
   Always grasp the plug; never pull the cord itself.



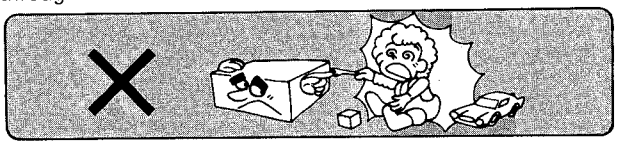
■ Never attempt to repair or reconstruct this unit

A serious electric shock might occur if this unit is repaired, disassembled or reconstructed by unauthorized persons, or if the internal parts are accidently touched.



■ For families with children

Never permit children to put anything, especially metal, inside this unit. A serious electric shock or malfunction could occur if articles such as coins, needles, screwdrivers, etc. are inserted through the ventilation holes, etc. of this unit.

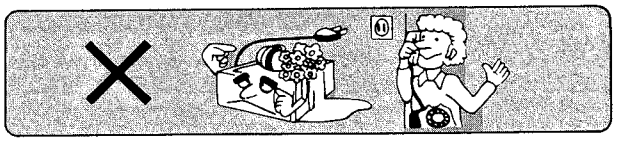


■ Turn off after use

If the unit is left for a long time with the power on, this will not only shorten its useful operation life, but may also cause other unexpected trouble.

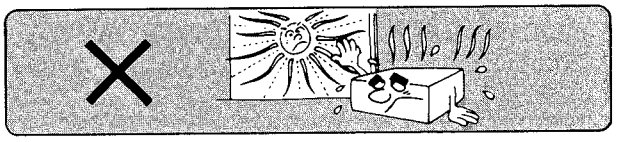
■ If water is spilled on the unit

Be extremely careful if water is spilled on the unit, because a fire or serious electric shock might occur. Immediately disconnect the power cord plug, and consult with your dealer.



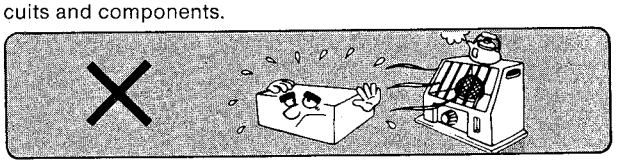
■ Place the unit where it will be well ventilated, and away from direct sunlight

Place this unit at least 10 cm (4") away from wall surfaces, etc., and away from direct sunlight.



■ Keep the unit away from heaters, etc.

Heat can damage the external surfaces as well as internal circuits and components.

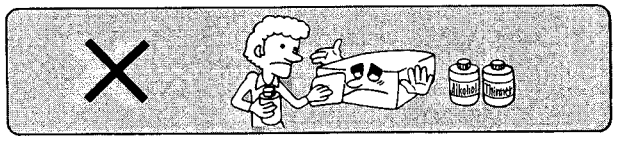


■ Avoid spray-type insecticides

Insecticides might cause cracks or "cloudiness" in the cabinet and plastic parts of this unit. The gas used in such sprays might, moreover, be ignited suddenly.

■ Never use alcohol or paint thinner

These and similar chemicals should never be used, because they may damage the finish.



■ If trouble occurs

If, during operation, the sound is interrupted or indicators no longer illuminate, or if abnormal odor or smoke is detected, immediately disconnect the power cord plug, and contact your dealer or an Authorized Service Center.

Before Connections for Surround-Sound Effect

The following items must be observed when making connections.

Amplifiers and receivers which can be connected to this unit . . .

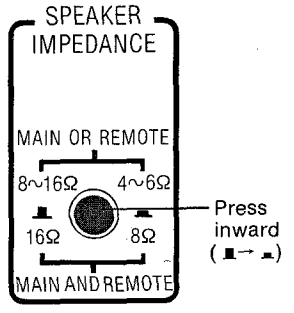
. . . are limited to the Technics models shown in the following table.

Note:
The models marked by "•", "★", "▲" and "※" have a speaker impedance selector at the rear panel of the unit, which must be set as shown in the following table.

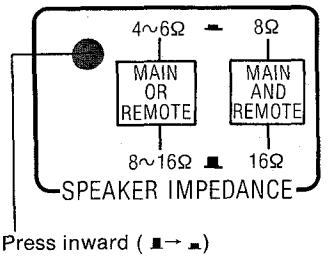
Amplifier					Receiver	
• SU-V1X • SU-V2X • SU-V4X • SU-V6X • SU-V8X	★SU-V7X ★SU-V10X	▲ SU-Z400	※SU-Z200 ※SU-Z250 ※SU-Z550	SU-V2 SU-V3 SU-Z25 SU-Z35 SU-Z45 SU-Z55	SA-110 SA-210 SA-212 SA-310	SA-323 SA-424 SA-R40

Speaker impedance selector setting

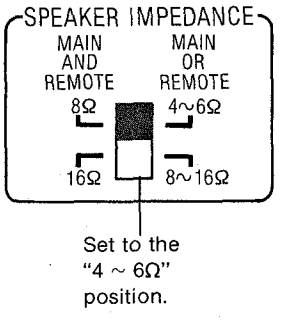
Models with the mark " • ".



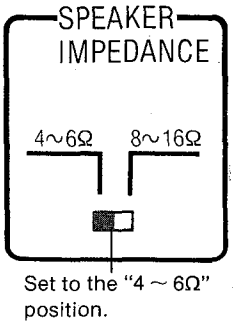
Models with the mark "★"



Models with the mark "▲".



Models with the mark "※".

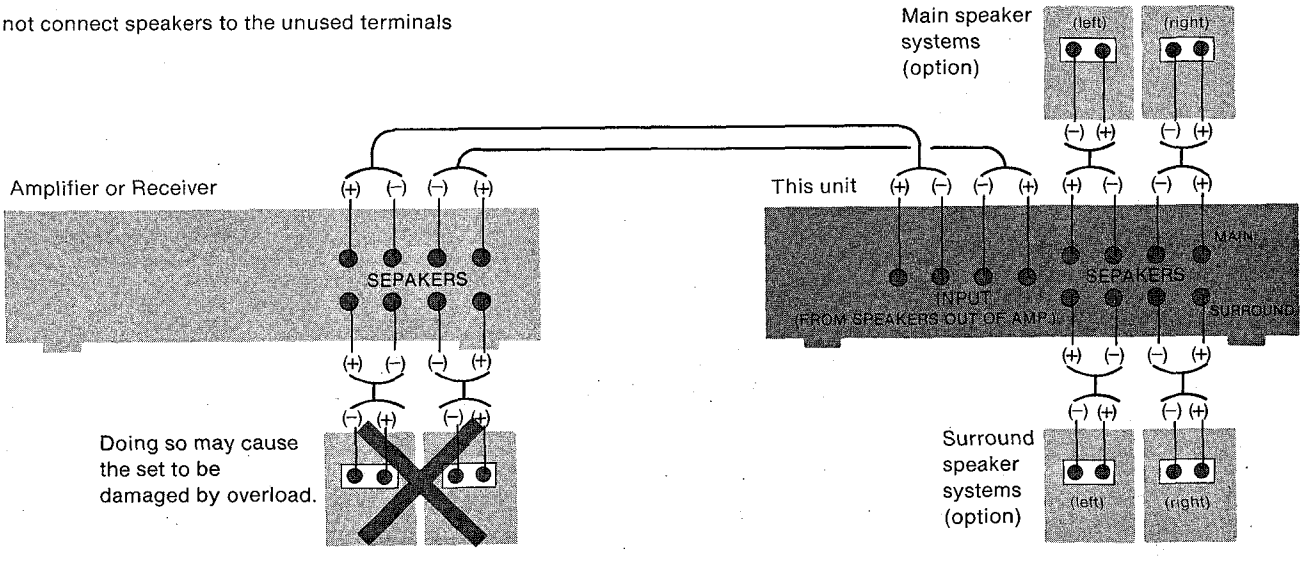


Speakers connected to this unit . . .

. . . must have an impedance of 8 ~ 16Ω.

When the amplifier or the receiver has terminals for 2 sets of speakers,

do not connect speakers to the unused terminals



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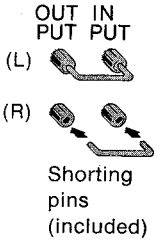
Connections

"GRAPHIC EQ/EXT" terminals

A frequency equalizer, etc., can be connected to these terminals.

Note:
When these terminals are not in use, be sure to insert the shorting pins (included).



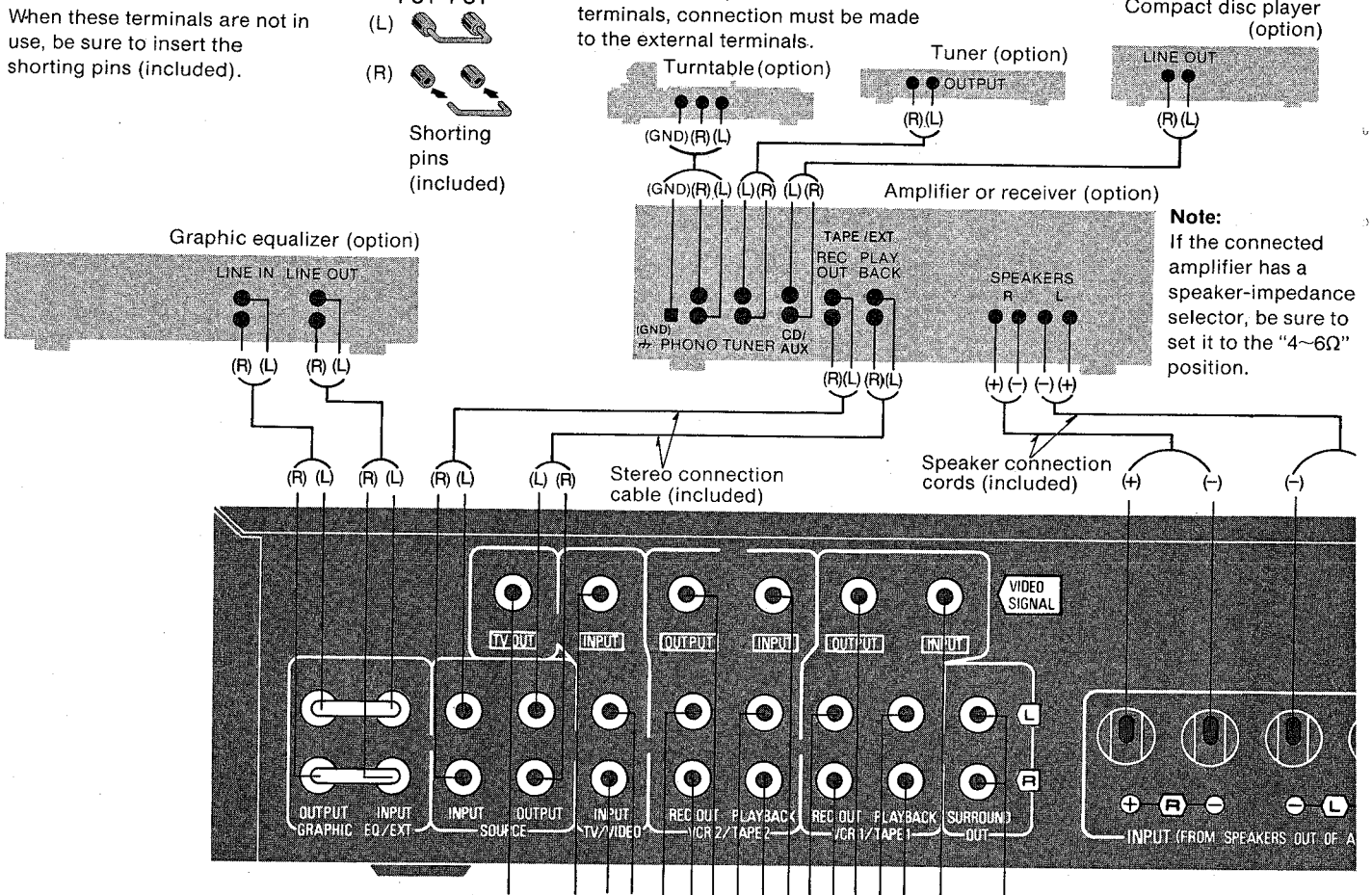
"SOURCE" terminals

Connect to tape terminals of amplifier or receiver.

Note: For amplifiers with external terminals, connection must be made to the external terminals.

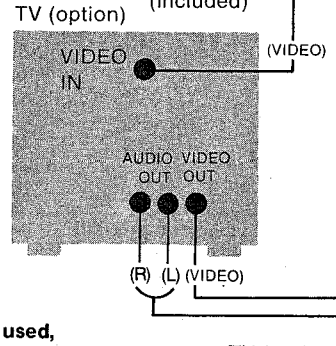
"INPUT" terminals

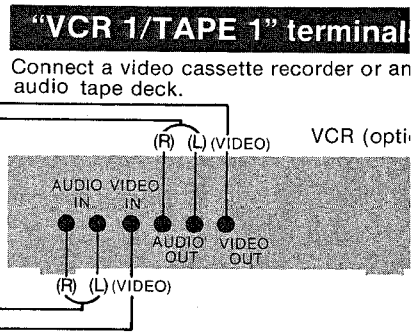
Connect to the speaker terminals of the amplfier or receiver.



"TV/VIDEO" terminals

Connect a TV, etc.
A TV without a video input terminal cannot be connected.



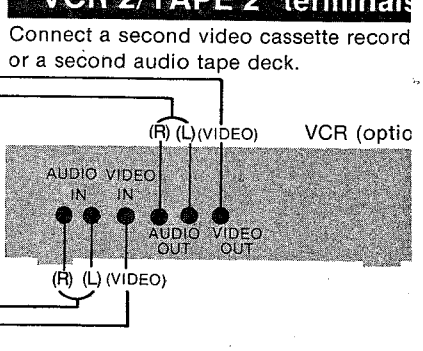


"VCR 1/TAPE 1" terminals

Connect a video cassette recorder or an audio tape deck.

"VCR 2/TAPE 2" terminals

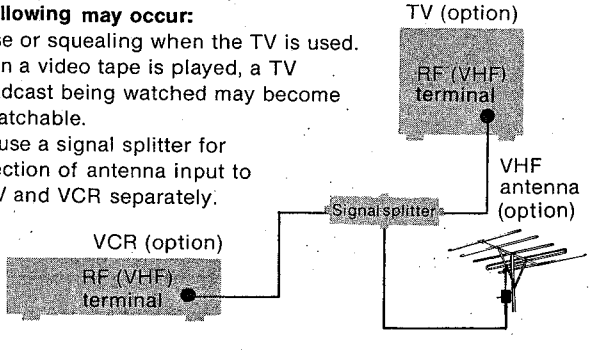
Connect a second video cassette record or a second audio tape deck.



Depending on the VCR used, the following may occur:

- Noise or squealing when the TV is used.
- When a video tape is played, a TV broadcast being watched may become unwatchable.

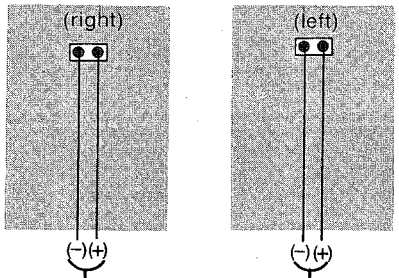
If so, use a signal splitter for connection of antenna input to the TV and VCR separately.



"SPEAKERS" terminals

Main speaker systems (option)

Speaker impedance: 8~16Ω



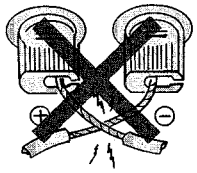
■ Connection of speaker wires

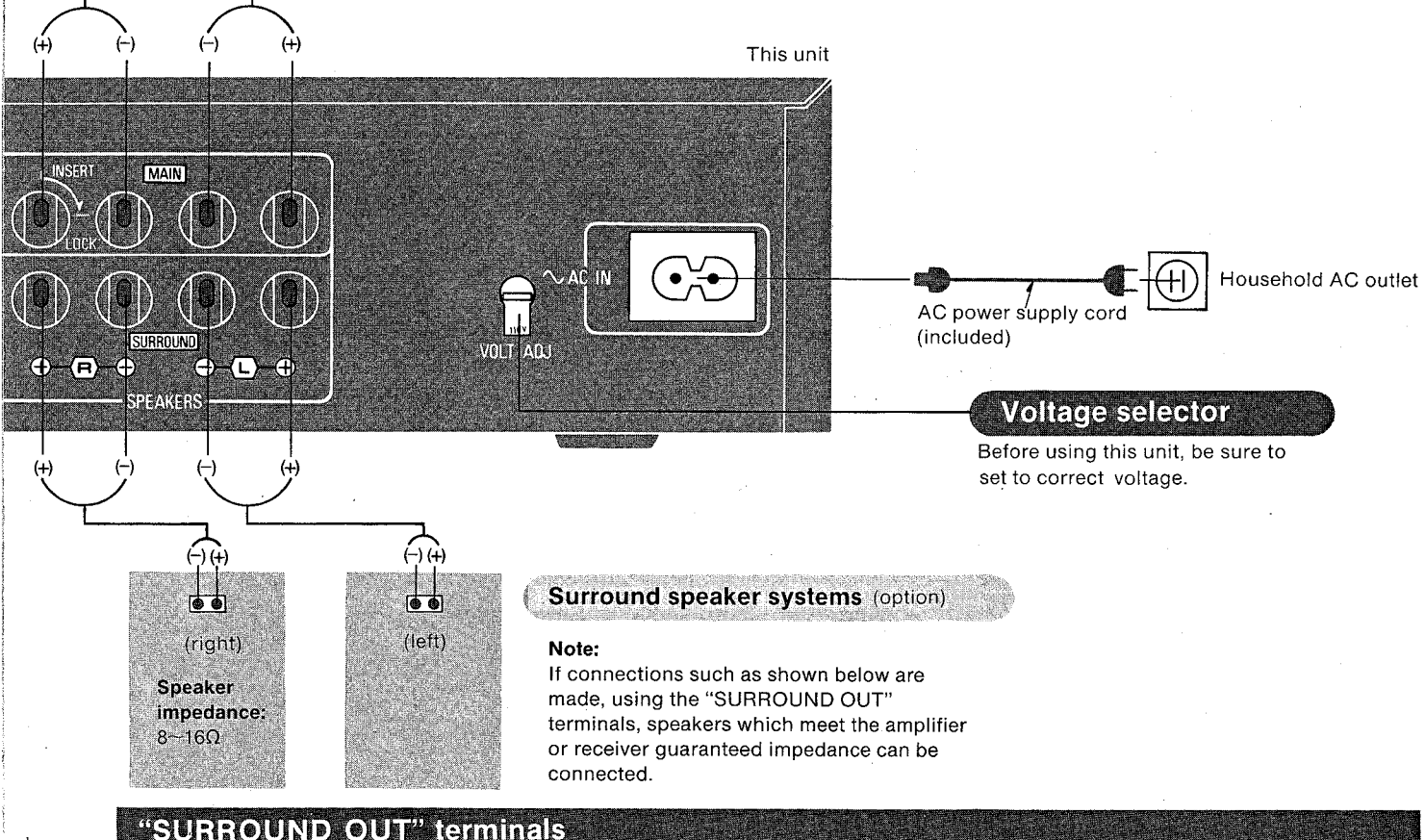
① Strip off the outer covering, and twist the center conductor.

② Turn completely to the left.

③ Insert wire and turn completely to the right. Pull wire to be sure it won't come out.

Note:
To prevent damage to circuitry, never short-circuit plus (+) and minus (–) speaker terminals.





Voltage selector

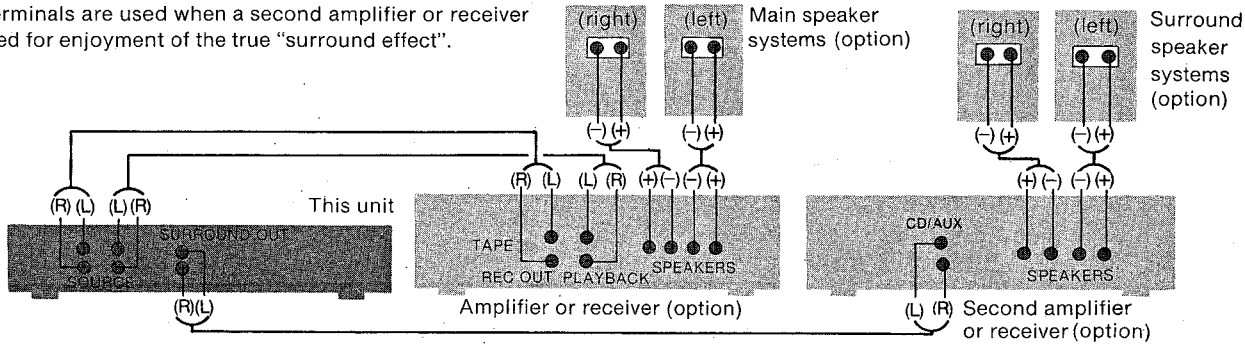
Before using this unit, be sure to set to correct voltage.

Surround speaker systems (option)

Note:
If connections such as shown below are made, using the "SURROUND OUT" terminals, speakers which meet the amplifier or receiver guaranteed impedance can be connected.

"SURROUND OUT" terminals

These terminals are used when a second amplifier or receiver connected for enjoyment of the true "surround effect".



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Front Panel Controls and Their Functions

Power switch (power)

Note:
Before switching the power ON, make sure the volume control of the amplifier or receiver is set to the minimum ("0") position.

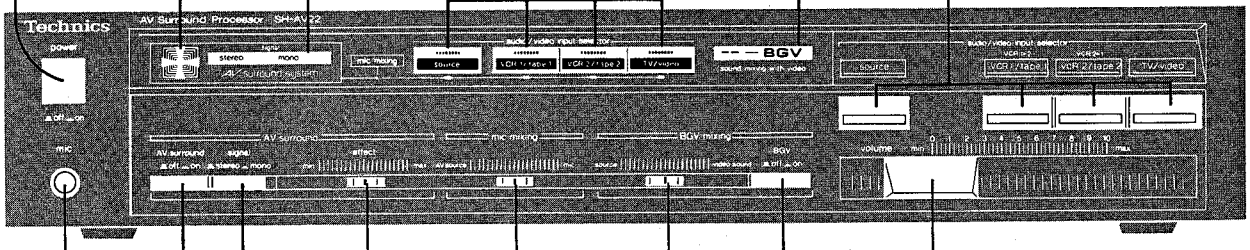
Audio/video surround-sound indicator
Illuminates when the audio/video surround-sound switch is set to the "on" position.

Audio/video surround-sound signal indicator (signal)
Illuminates in accordance with the position of the audio/video surround-sound signal selector.

BGV mixing indicator (BGV)
Illuminates when the BGV mixing on-off switch is set to the "on" position.

Audio video input selectors (audio/video input selector)
These selectors are used to select the program source to be played from the components connected to this unit.
The corresponding indicator illuminates during operation to indicate the selected program source.

Program source indicator (audio/video input signal)
Illuminates during operation to indicate the selected program source.



Volume control (volume)

BGV mixing on-off switch (BGV)
Set to the "on" position for BGV mixing.

BGV mixing volume control
Adjust this control to the desired BGV mixing level.

Microphone-mixing volume control (mic mixing)
Adjust this control to the desired microphone and source mixing level.

Audio/video surround-sound effect control (effect)
This control can be used to adjust the amount of the audio/video surround-sound effect.

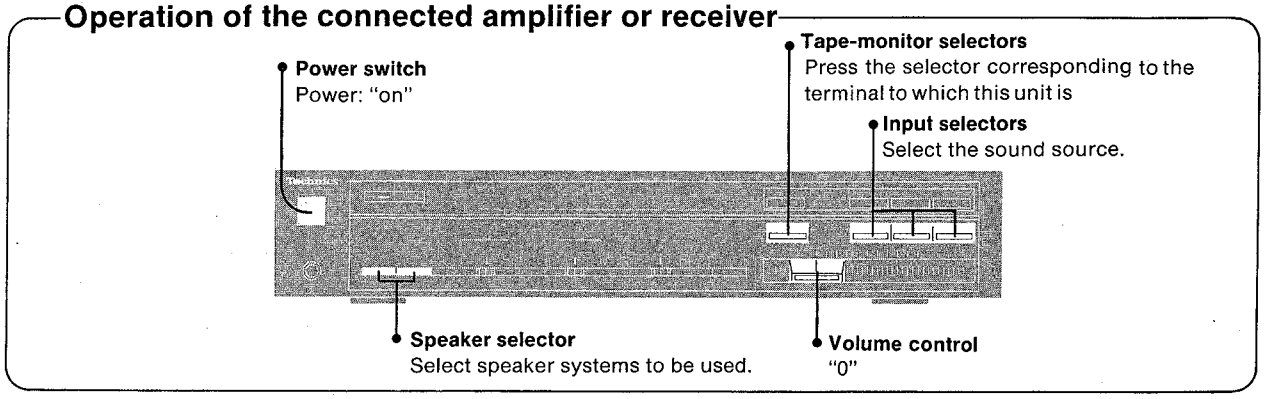
Audio/video surround-sound signal selector (signal)
stereo (→):
For a stereo sound source (stereo broadcast, stereo tape, etc.)
mono (→):
For a monaural sound source (monaural broadcast, etc.)

Audio/video surround-sound switch (AV surround)
This selector is used to switch the surround sound effect ON and OFF.

Microphone jack (mic)

Surround Sound While Watching A Video Source

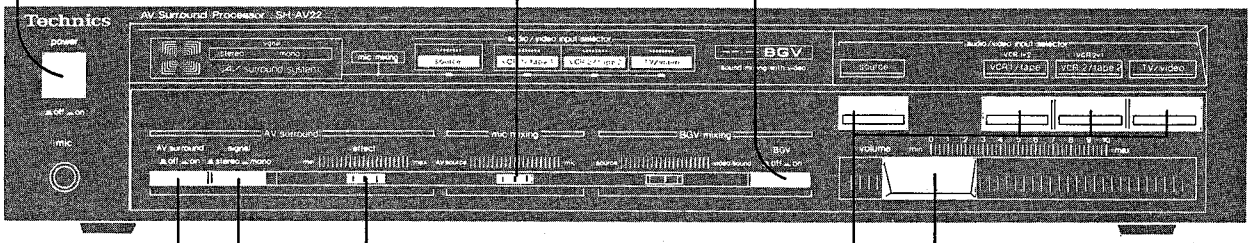
Operation of the connected amplifier or receiver



1 **Power: "on" (■→▬)**
Be sure to reduce the volume level to the minimum ("0") position before turning on the power.

2 **"AV source"**

3 **"off" (▬→ ■)**



8 **"on" (■→ ▬)**

9 **stereo (▬→■):**
For a stereo sound source (stereo broadcast, stereo tape, etc.)
mono (■→▬):
For a monaural sound source (monaural broadcast, etc.)

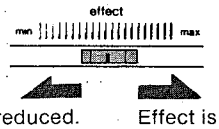
4 **Set the volume control of the connected amplifier or receiver to about the middle position.**

5 **Operate each component.**
(Refer to the operation instructions of each component.)

7 **Adjust the volume level.**
If sound volume is insufficient at the "max" position, increase the volume level of the connected amplifier or receiver.

6 **Select the program source.**
source (■→ ▬):
Press this button to listen to the sound source selected by the input selectors of the amplifier or receiver connected to the "SOURCE" terminals.
VCR 1/tape 1 (■→ ▬):
Press this button when the video deck, audio tape deck, etc., connected to the "VCR 1/TAPE 1" terminals (on the rear panel) is to be used.
VCR 2/tape 2 (■→ ▬):
Press this button when a second video deck, second audio tape deck, etc., connected to the "VCR 2/TAPE 2" terminals (on the rear panel) is to be used.
TV/video (■→ ▬):
Press this button when the TV or video disc player connected to "TV/VIDEO" terminals (on the rear panel) is to be used.

10 **Adjust the surround-sound effect.**
For most sound sources, the position of greatest effect is slightly to the right of the center position. The effect may, however, differ to some extent depending upon the sound source, so make the adjustment according to your own preference.



Effect is reduced. Effect is increased.

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Mixing

BGV mixing

You can mix sounds from audio equipment (turntable, tuner or compact disc player connected to the amplifier or receiver) with sound of a video source (VCR, TV, video disc player, etc. connected to this unit) as you watch the video source.

1 Switch the amplifier or receiver ON, and prepare it for listening to the sound source.
(Refer to page 9.)

2 Power: "on" (■→ ▲)
Be sure to reduce the volume level to the minimum ("0") position before turning on the power.

3 "AV source"

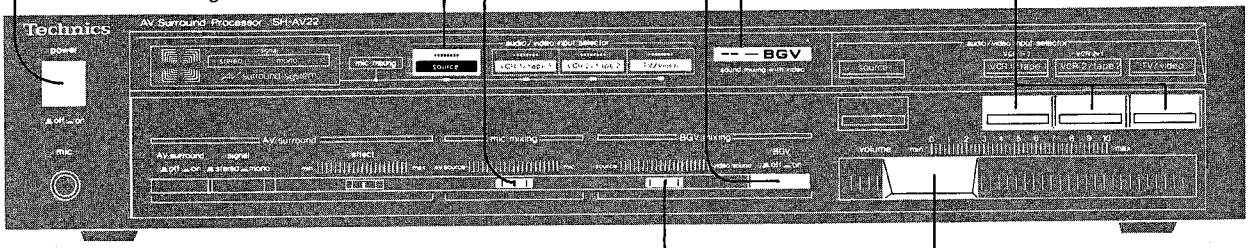
4 "on" (■→▲)
The BGV mixing indicator and the program source indicator ("source") will illuminate.

5 Select the equipment (to be the mixed sound source) connected to this unit.

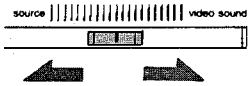
Program source indicator

BGV mixing indicator

This unit



9 Adjust the mixing level.



Sound volume level of source connected to amplifier or receiver increases.

Sound volume level of video source connected to this unit increases.

7 Operate each component.
(Refer to the operation instructions of each component.)

8 Adjust the volume level.
If sound volume is insufficient at the "max" position, increase the volume level of the connected amplifier or receiver.

6 Set the volume control of the connected amplifier or receiver to about the middle position.

Microphone mixing

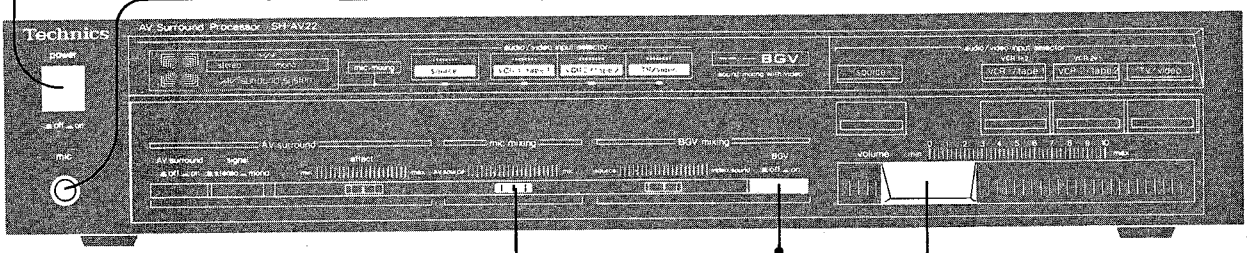
You can sing along with the desired program source or add commentary or narration to video sound during playback.

1 Power: "on" (■→ ▲)
Be sure to reduce the volume level to the minimum ("0") position before turning on the power.

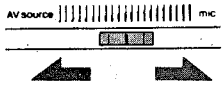
2 Connect the microphone.
Microphone (Suitable impedance: 600Ω) (option)

3 Set the volume control of the connected amplifier or receiver to about the middle position.

This unit



6 Adjust microphone or audio/video source mixing level.



Audio/video sound increases.

Microphone sound increases.

Set to "on" to mix BGV-mixed sound with microphone sound. (See above.)

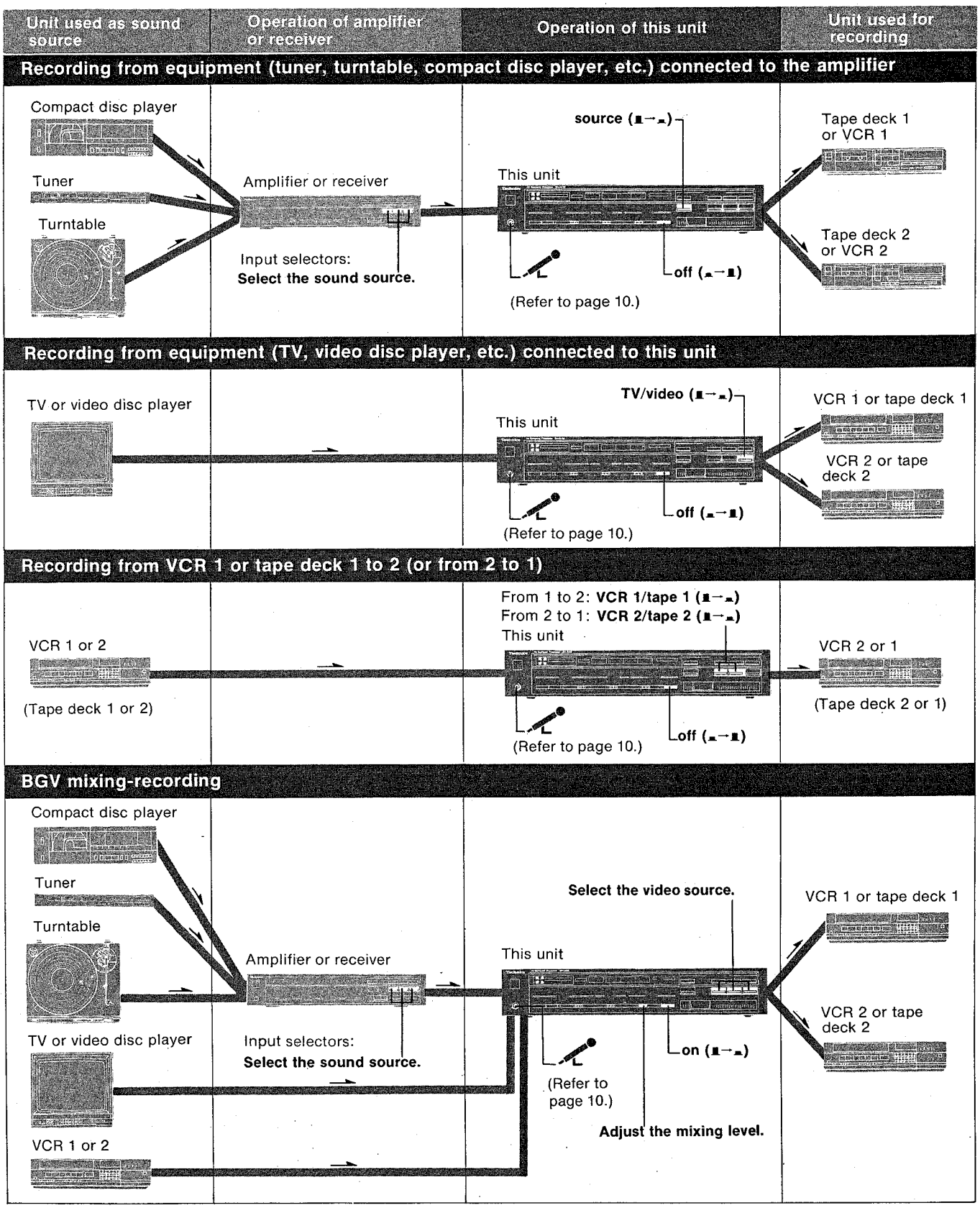
5 Adjust the volume level.
If sound volume is insufficient at the "max" position, increase the volume level of the connected amplifier or receiver.

4 Operate each component.
(Refer to the operation instructions of each component.)

Recording

Follow these steps for recording:
1. Prepare this unit and the amplifier.
2. Prepare the VCR or audio tape deck to be used for recording.
3. Begin operation of the unit which will be the source of the sound to be recorded.

Note:
For information regarding the operation of equipment other than this unit, refer to the operating instructions for that unit.


Unit used as sound source
Operation of amplifier or receiver
Operation of this unit
Unit used for recording
Recording from equipment (tuner, turntable, compact disc player, etc.) connected to the amplifier
Compact disc player
Tuner
Turntable
Amplifier or receiver
Input selectors:
Select the sound source.
source (■→▲)
This unit
off (▲→■)
(Refer to page 10.)
Tape deck 1 or VCR 1
Tape deck 2 or VCR 2
Recording from equipment (TV, video disc player, etc.) connected to this unit
TV or video disc player
TV/video (■→▲)
This unit
off (▲→■)
(Refer to page 10.)
VCR 1 or tape deck 1
VCR 2 or tape deck 2
Recording from VCR 1 or tape deck 1 to 2 (or from 2 to 1)
VCR 1 or 2
(Tape deck 1 or 2)
From 1 to 2: VCR 1/tape 1 (■→▲)
From 2 to 1: VCR 2/tape 2 (■→▲)
This unit
off (▲→■)
(Refer to page 10.)
VCR 2 or 1
(Tape deck 2 or 1)
BGV mixing-recording
Compact disc player
Tuner
Turntable
TV or video disc player
VCR 1 or 2
Amplifier or receiver
Input selectors:
Select the sound source.
Select the video source.
This unit
on (▲→■)
(Refer to page 10.)
Adjust the mixing level.
VCR 1 or tape deck 1
VCR 2 or tape deck 2

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Technical Specifications

(DIN 45 000)

■ AUDIO SECTION

Input sensitivity/input impedance

SOURCE INPUT	150 mV/100 kΩ
TV/VIDEO	150 mV/100 kΩ
VCR 1/TAPE 1, VCR 2/TAPE 2 (PLAYBACK)	150 mV/100 kΩ
GRAPHIC EQ/EXT. (INPUT)	150 mV/20 kΩ
MIC	1.5 mV/10 kΩ

Output voltage/output impedance

SOURCE OUTPUT	150 mV/20 kΩ
VCR 1/TAPE 1, VCR 2/TAPE 2 (REC OUT)	150 mV/470 Ω
GRAPHIC EQ/EXT. (OUTPUT)	150 mV/2.2 kΩ

S/N (surround sound OFF)

SOURCE, VCR 1/TAPE 1, VCR 2/TAPE 2	90 dB (DIN 45 500)
(OUTPUT: SOURCE OUT)	82 dB (IHF '66)

Frequency response (surround sound OFF)

SOURCE	5 Hz ~ 100 kHz +0 dB, −3 dB
TV/VIDEO	5 Hz ~ 100 kHz +0 dB, −3 dB
VCR 1/TAPE 1, VCR 2/TAPE 2	5 Hz ~ 100 kHz +0 dB, −3 dB
MIC	40 Hz ~ 13 kHz +0 dB, −3 dB

Maximum input voltage (1 kHz)

SOURCE, TV/VIDEO, VCR 1/TAPE 1, VCR 2/TAPE 2	5.5 V
MIC	80 mV

Total harmonic distortion

SOURCE INPUT (at 1 kHz)	0.003%
MIC (at 1 kHz)	0.03%

■ FUNCTIONS

BGV (back ground video)	Sound selected by input selector is heard while watching selected video source; can also be mixed with video source sound; mix level controlled by BGV mixing level control.
Surround sound on/off	Included.
Surround sound mono/stereo	Selectable according to input signal mode.
Microphone mixing	Microphone sounds can be mixed with audio and/or video source sounds; mix level controlled by microphone mixing level control.

■ VIDEO SECTION

Input voltage/input impedance

TV/VIDEO, VCR 1/TAPE 1, VCR 2/TAPE 2	1.0 Vp-p/75 Ω
Maximum input voltage	2.0 Vp-p

Output voltage :

(input : 1 Vp-p, load 75Ω unbalanced) TV/VIDEO, VCR 1/TAPE 1, VCR 2/TAPE 2	1 Vp-p

■ GENERAL

Power consumption	13 W
Power supply	AC 50 Hz/60 Hz, 110V/127V/220V/240V
Dimensions (W×H×D)	430 × 86 × 236 mm (16-15/16"×3-5/32"×9-31/32")
Weight	2.8 kg (6.2 lb)

Troubleshooting Guide

Before requesting service for this unit, check this table to determine if the problem can be solved as described below. If the problem still persists after making these checks, or if there are symptoms of malfunction not described in this table, it is recommended that you consult the store where this unit was purchased or your local Servicenter (see list included) for further information and assistance.

Problem	Probable cause(s)	Suggested remedy
No sound is heard when the power is turnd ON.	Connections are incomplete or incorrect to the speaker systems, etc.	• Check to be sure that all connection wires are correctly connected. (See page 6 and 7)
	The microphone-mixing volume control is set to the "mic" position.	• Set to the "AV source" position.
	The volume control of this unit is set to the "0" position.	• Adjust the volume level of this unit.
	The volume control of the amplifier or receiver is set to the "0" position.	• Adjust the volume level of the amplifier or receiver.
	The setting of each selector is not correct.	• Check to be sure that the selectors are set to the correct position.
No "surround effect"	The audio/video surround-sound effect control is not set for sufficient effect.	• Adjust the audio/video surround-sound effect control.
	The audio/video surround-sound switch is set to the "off" position.	• Set to the "on" position.
	The audio/video surround-sound signal selector is set to "stereo" for monaural sound.	• Set to the "mono" position.